Radiation Sources and Safety Web Quest Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Go to the first site listed under Radiation/Safety resources and scroll down to the middle of the page to visualize the table.
2. Write the **nuclear** symbol (with numbers) for each type of radiation in the table below.
3. In terms of easy, medium, and difficult, fill in the relative ease at which each of these particles can be stopped in the row labeled shielding.
   1. Provide an example of what type of material would be able to stop:
      1. Alpha Radiation \_\_\_Few cm of air or a thin sheet of paper\_\_\_\_\_
      2. Beta Radiation \_\_\_Few mm of metals like aluminum\_\_\_\_\_\_\_\_\_
      3. Gamma Radiation \_\_\_Thick layer of steel or concrete, several cm of lead
4. Ionizing ability is directly related to biological hazard. Rate each particle as either low, medium, or high according to its biological hazard.
5. The energy of a particle is directly related to its mass. Rate the energy of each particle as having low, medium or high energy (relative to each other) based on their relative masses in the row labeled energy.
6. Go to the second site listed under Radiation/Safety Resources and examine the information about each type of radiation. Based on the descriptions of each particle, rate the relative actual hazard of each as low, medium, or high in the row labeled actual hazard.

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| --- | --- | --- | --- |
|  | Alpha Radiation | Beta Radiation | Gamma Radiation |
| Symbol |  |  |  |
| Shielding | Easy | Medium | difficult |
| Biological Hazard | High | Medium | Low |
| Energy | High | Medium | Low |
| Actual Hazard | Low | Medium | High |

1. Go to the third website listed under Radiation/Safety Resources and answer the following questions based on the material.
   1. What is ionizing radiation?

Decay particles that move through matter and knock electrons out of orbit thereby creating ions.

* 1. What are the three factors that affect radiation doses?

Time, Distance and Shielding

* 1. If a person stands 20ft from a radiation source, how will the dose of radiation received compare to the dose that a person who is 1ft away from the source would receive?

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